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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,686	03/28/2001	Satoshi Nakamura	040894-5653	2438

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EXAMINER

CHERVINSKY, BORIS LEO

ART UNIT PAPER NUMBER

2835

DATE MAILED: 10/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/818,686

Applicant(s)

NAKAMURA, SATOSHI

Examiner

Boris L. Chervinsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6,7,10-13 and 15-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6,7,10-13 and 15-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

The examiner acknowledges the submission of the Appeal Brief filed on 09/10/02. The amendment filed on 06/10/02 has been entered as indicated in the supplemental Advisory Action dated 07/10/02. At this time claims 1, 6, 7, 10-13, 15-22 are pending in the instant application. Examiner also acknowledges that the arguments submitted in the Appeal Brief regarding rejections under 35 U.S.C. §103(a) of claims 1 and 15 are convincing regarding teachings of the prior art reference by Hanninghaus et al., therefore the finality of the Office Action dated 03/20/02 has been withdrawn.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 10-12, 15, 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christopher et al. in view of Kamioka.

Christopher et al. disclose a circuit board 201 having an electronic components 119, 225 provided with a heat radiating plate (not numbered) and being mounted on its surface by soldering, heat radiating means 107 made of metal, having a plated layer and being soldered to the underside of the circuit board, a first and second heat radiating patterns provided on the upper side of the circuit board and the underside of the circuit board and the heat radiating patterns are connected by plated through holes 205 and 229 (claim 10, 22), the heat radiating patterns constitute circuits formed on the

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circuit board (claims 11, 12, 20, 21). Christopher discloses the claimed invention except the second radiating pattern having larger area than the first radiating pattern. Kamioka discloses heat radiating patterns 12 (see Fig. 3) on the upper side of the circuit board 5 contacting the electronic component 8 and on the underside surface of the circuit board contacting the heat radiating plate 3; the heat radiating pattern on the underside having larger area than the one on the upper side. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to have the second radiating pattern with larger area as disclosed by Kamioka in the structure disclosed by Christopher et al. to have larger contact area with the heat radiating plate for sufficient heat dissipation.

3. Claims 6, 7, 13 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christopher et al. in view of Kamioka, as applied to claims 1 and 15, and further in view of Miyagi et al.

Christopher et al. disclose the claimed invention except the heat radiating means having a plurality of fins. Miyagi et al. disclose the heat radiating means attached to the underside of the circuit board and having a plurality of fins, the fins form a corrugated cross section, uniformly shaped. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have multiple fins attached to the heat radiating means as disclosed by Miyagi et al. in the structure disclosed by Christopher et al. for better heat dissipation. Regarding the method of forming the device by extruding the belt-shaped material and cutting it at prescribed length is not germane to the issue of patentability of the device itself since it is well settled that the presence of

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process limitations which do not otherwise distinguish the current article over the prior art impart patentability to that product. (In re Johnson, 157 USPQ 670, 1968; In re Thorpe, 227 USPQ 964, 1985). Therefore, this limitation has not been given patentable weight.

4. Claims 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christopher et al. in view of Kamioka.

Christopher et al. disclose the claimed invention, as applied to claim 15, except for the material of plated layer containing tin or nickel. It would have been obvious to one having ordinary skill in the art at the time the invention was made to , since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *In re Leshin*, 125 USPQ 416.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris L. Chervinsky whose telephone number is 703-308-5429. The examiner can normally be reached on 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren E. Schuberg can be reached on 703-308-4815. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

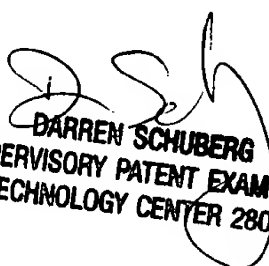
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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-5115.

**BORIS CHERVINSKY
PRIMARY EXAMINER**



September 30, 2002



**DARREN SCHUBERG
SUPERVISORY PATENT EXAMINER
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